Power Management

A comprehensive guide to the communication tools offered by all ranges of MGE Office Protection Systems uninterruptible power supplies:

- **data protection**
  Shutting down and restarting servers automatically
- **alarm notification**
  Local and remote messages (e-mail, SMS, pager)
- **supervision**
  The main parameters of the uninterruptible power supply can be managed using a browser, Network Management System or multi-UPS supervisor
- **remote control**
  The equipment **powered by** the UPS can be **switched** on and off

MGE
Office Protection Systems

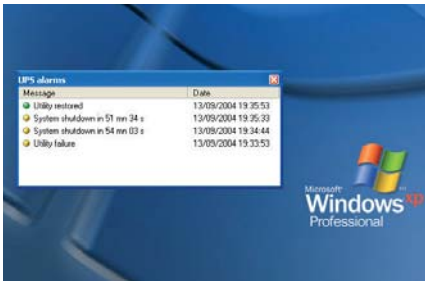
ENERGIZE YOUR ENTERPRISE

Aim:

improve equipment reliability and guarantee data integrity

Uninterruptible power supplies are used as a backup system in case of a power failure to prevent downtime. This type of protection is essential, but is only partially effective if the user is not in control of the situation. With power supply management, the user is notified immediately of the status of the system and can initiate automatic actions depending on the events, control the power supply remotely and manage the electrical equipment more effectively.

- Manage critical situations using pre-programmed automatic actions
- Monitor equipment more easily
- Control the power supply to critical equipment remotely

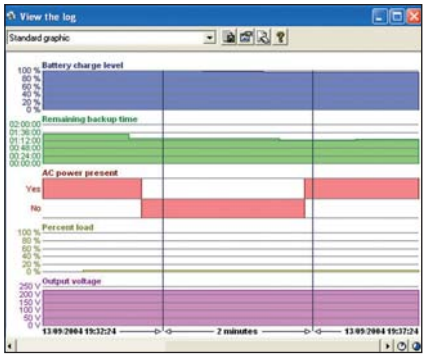


Shutting down server and PC operating systems

The back-up time of a UPS may not be adequate enough to support the system for prolonged power cuts.
When the battery is nearly discharged, the UPS software:

- initiates the sequences of operations programmed by the user;
- automatically closes all open system files;
- shuts down the computer.

Log of UPS events and measurements



- logs events, at night or over weekends, for example;
- monitors the quality of the power on site.

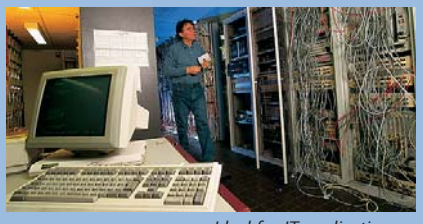
Instantaneous notification

- alerts users of power supply faults and shows how much time remains until the battery can no longer support the system;
- alerts remote network administrators by sending messages via e-mail, SMS Text, pager or fax.

Remote equipment control

Some MGE Office Protection systems have an independent remote control of each outlet:

- shutdown/restart an item of equipment that is locked up;
- turn off low priority outlets to ensure the maximum back-up time for more critical applications;
- restart equipment in sequence, etc.



Ideal for IT applications.

Personal Solution Pac for Linux.

Linux and MGE Office Protection Systems uninterruptible power supplies

For several years MGE Office Protection Systems has been actively supporting the trend towards open source software by providing the most advanced power management facilities. One example is the new Personal Solution Pac management system for Linux which is based on the Open Source code to which MGE has largely contributed.

Individual computer applications

A point-to-point (RS232 or USB) link between the UPS and the computing system to be protected, which provides power protection for the server or/and a workstation and its peripherals.

The operating system "plug and play" solution

Some operating systems, such as Windows, have built-in uninterruptible power supply functions for critical tasks. MGE Office Protection Systems are plug and play: when the UPS is connected to the system using a USB cable, the operating system detects the UPS automatically and installs the appropriate drivers.

Personal Solution-Pac

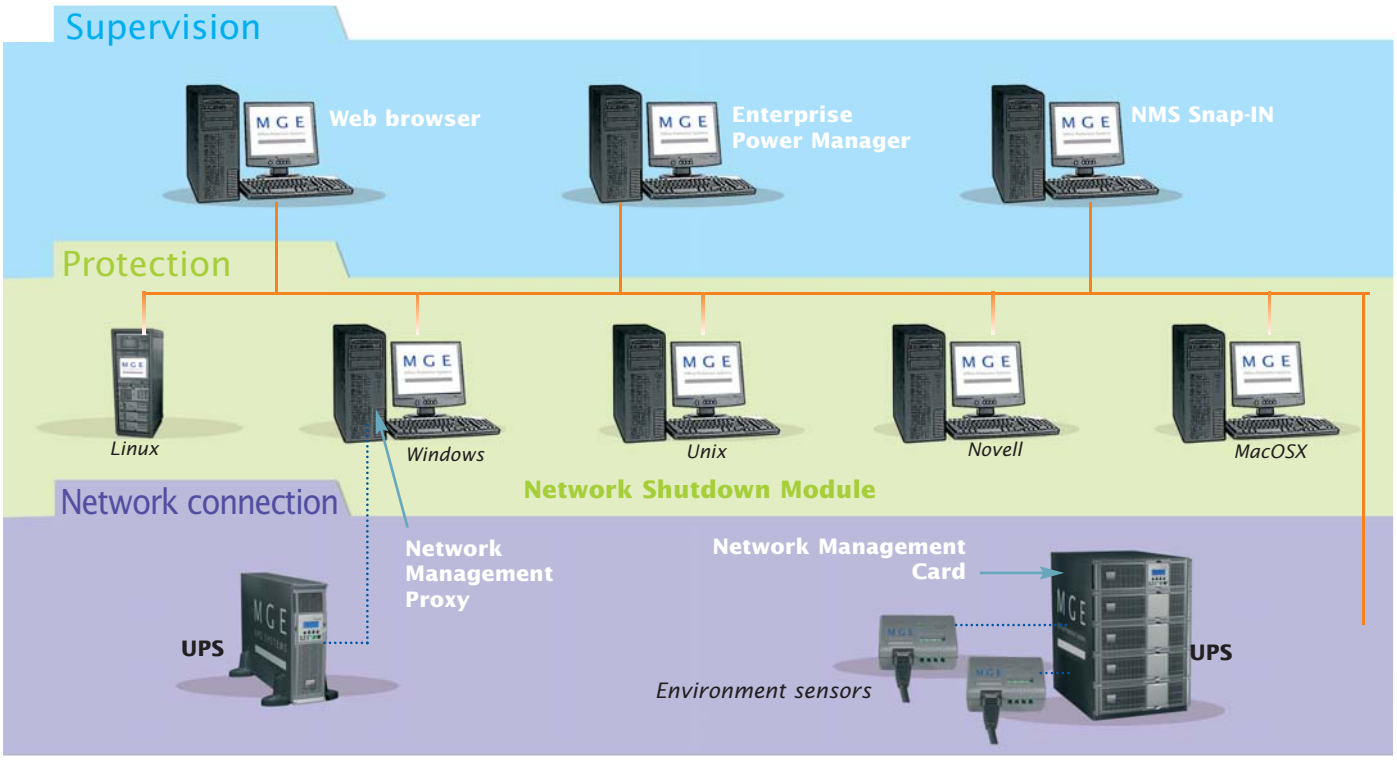
To provide more control and settings than those provided by the operating system's drivers, the MGE Office Protection Systems "Personal Solution-Pac" can be used to fine-tune the shutdown parameters and provide additional facilities such as controlling individual devices, programming responses to events, calculating true backup time in case of mains power loss.

Network applications

MGE Office Protection Systems has developed a comprehensive, simple and coherent range of products for power supply management for servers and other systems requiring power protection.

This range provides 3 main functions:

- connecting UPS systems to an IP network;
- total protection of servers and equipment: alarms, shutdown, etc.
- active supervision of the whole system.



Connection to IP networks

There are 2 ways of connecting a UPS to an IP network:
- adding a SNMP/HTML card to the UPS, which becomes the interface to the network.
- using a nearby PC or server connected to the network as a proxy.

Network Management Card

SNMP/HTML cards are recommended for central UPS systems that protect a complete network or for UPS systems providing back-up for critical equipment.
When the card is fitted, the UPS has its own IP address with local intelligence to:
- serve Web pages with reports, settings and alarms;
- plug in to SNMP based network management consoles such as Openview, IBM, Tivoli Netview and Computer Associates Unicenter;
- communicate with shutdown software installed on the servers to be protected.

These cards can be used with the whole UPS range (single phase and three phases) and support secure socket layer communications.

Network Management Proxy

The SNMP/HTML Proxy is a more economical solution for small UPS systems. It allows a UPS to be controlled over the network without adding to the basic cost of the UPS.
The proxy software agent is installed on the system to which the UPS is connected via a USB or RS232 port.
The SNMP/HTML Proxy agent is used to manage a UPS remotely using a standard browser or network management console.

Protection: shutting down servers

The shutdown module is a highly efficient program with quiet installation and centralised configuration.

To ensure the integrity of the system and the data, the operating system of a computer system must be shut down in the correct sequence.
Software must be installed on the servers to execute various functions before the power supply is cut off, for example:
- executing a script to close all applications running on the server;
- initiating a shutdown sequence or hibernation after a pre-set timeout or just before total battery discharge;
- rebooting the operating system automatically or manually when the mains power is restored;
- personalising alarm messages for events concerning the UPS, etc.

New: The Network Shutdown Module can now be used to carry out actions selectively for redundant UPS systems (servers with multiple power supplies, paralleled UPSs, etc.) to provide the highest availability and data integrity for the most critical data.
MGE Network Shutdown Modules operate equally well with SNMP/HTML card and SNMP proxy systems and can easily be configured remotely via a browser.

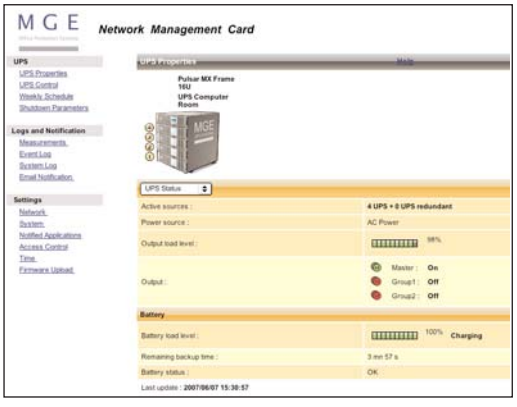
UPS systems supervision

Supervision using a Web browser

UPS systems can be supervised using a standard Web browser to provide details of all UPS parameters, measurements and settings, from any point in the network, simply using the IP address of each UPS.

Supervision using a Network Management System

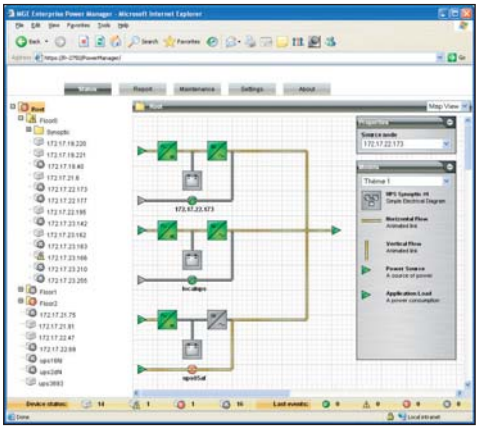
Enterprise network administrators have the same level of details for UPS systems as for servers and switches using one of the snap-ins designed for the best known Network Management Systems, such as HP SIM, HP OpenView, IBM Tivoli and CA Unicenter. MGE Office Protection Systems UPSs meet SNMP standards which cover all the MGE Office Protection Systems product specific functions. They can be easily incorporated into Network Management Systems or server management systems such as HP Systems Insight Manager 7 for auto-detection, on card display, colour-coded alarms on each device's icon, etc.



UPS systems supervision *(cont)*

Supervision using Enterprise Power Manager V2

Easy supervision of a set of UPS systems
Enterprise Power Manager is a system for managing networked UPS systems more easily and at lower cost than the major NMS platforms, as well as being dedicated to power management functions.
The manager of the UPS network has an overall, consolidated view of the main operating parameters of all the UPS systems. This information is accessible from any workstation using a standard Web browser.
He can easily sort the UPS overviews according to the most critical parameters (location, system status, etc). Alarms are centralised and transmitted, if required, by e-mail or SMS.
The log of events and operations helps preventive management of the UPS network.



An overall view of the UPS network

A product that is simple to deploy, using industry standards
When it is installed, the Enterprise Power Manager can carry out a scan for all UPS systems from both MGE Office Protection Systems and other power management units (PDUs, midspans, STSs, etc).
The user is then presented with a layout (in several different ways) that can be configured easily, as required, according to the type of UPS, location, operating status, etc.

Very advanced power supply control
Clicking on an UPS in the layout shows detailed information about the operating and configuration parameters (including three phase measurements) in a dedicated window. Complex UPS architectures (paralleled, with STS, etc) can also be shown and easily managed. Enterprise Power Manager uses Secure Sockets Layer (SSL) and several levels of password (administrator, user, etc) for complete security.

Simple, economical and scaleable
A version limited to 5 UPS is available free with each network UPS. This version can also be used to evaluate the software for a more extensive network before purchasing an Enterprise Power Manager for 50 or more UPS systems.

Additional functions

Remote On/Off Control
As a UPS can be turned on and off remotely, it becomes a smart IT equipment switch.
This function makes it possible, for example, to re-start a locked-up hardware device from a remote site.
The parameters for automatic or manual mode can be enabled.

Programming
This function can be used to program shutdown and re-start sequences for all UPS protected devices such as, for example, shutting down servers every evening at 20.00 hours and re-starting them the following morning at 06.00 hours, Monday to Friday.

Individual outlet socket control
Many systems from MGE Office Protection Systems (or intelligent PDUs) have Powershare™ for turning groups of sockets on and off.
This feature is useful in particular for:
- shedding non-critical systems when there is a power cut;
- defining start-up sequences;
- individual management of several IT systems connected to a central UPS.

Other options

Multislot

The “Multislot” concentrator can be used to connect a single UPS Comet EX RT to several different networks.

SNMP/HTML Card Environment Sensor

UPS are often used in sensitive environments such as computer bays. Environmental conditions (temperature, humidity and door opening) can also affect the system availability. MGE Office Protection Systems therefore provides an environment sensor with a temperature sensor, humidity sensor and two switch inputs. It is designed to work with SNMP/ HTML Cards and can be installed anywhere without problem.

Summary of power management functions

Individual computer applications

Personal Solution-Pac*

	Windows Vista Server 2003/XP/2000 NT/9X	Mac OS X (Power Management	Linux Debian, Mandriva Redhat, Suse Novell Ubuntu	**IBM** AIX 4.3, 5.1, 5.3 **Sun** Solaris WS 7,8, 9, 10 PC 2.6, 7, 8 **HP** HP-UX 10.x, 11	Novell Netware 5.x, 6.5
Installation					
Connection	USB or série	USB	USB or Serial	Serial	Serial
Simple installation	yes, "plug and play"	yes	yes	yes	yes
Basic functions					
Automatic shutdown at end of back-up time	yes (+ hibernation)	yes	yes	yes	-
Automatic re-start	yes	yes	yes	yes	yes
Alarm messages	yes	yes	yes	yes	yes
Log file	yes	no	yes	yes	yes
Alarm messages by e-mail	yes (+ pager and SMS)	-	-	yes	-
GUI					
User interface	advanced	Basic	graphic	semi graphic	Windows workstation
Graphic display of log file	yes	-	-	-	-
Contextual help	yes	-	(on-line help-)	-	-
Advanced functions					
Automatic execution of scripts	yes	yes	yes	yes	yes
Event and action configurations	yes	-	yes (manual)	yes	yes
ON/OFF programming	yes	-	yes (manual)	-	-
Powershare™ socket management	yes	-	yes (displayed)	-	yes

** Personal Solution-Pac is delivered with the UPS.*

Network applications

Connection to IP networks		
	SNMP/HTML Card	***SNMP Proxy***
UPS compatibility	Minislot for Evolution and Evolution S ,Pulsar, Pulsar M/MX, Pulsar MX Frame, Transverse for Comet EX RT and others via MultiSlot	Connection to a Proxy system Windows Vista/XP/2003/2000 for USB or serial
Network interface	10Base-T, 100Base-TX	not applicable
Network protocols	TCP/IP, UDP, HTTP1.1, SNMPV.1, SMTP, BOOTP, DHCP, SSL v.3	not applicable
Security	SSL	SSL
SNMP traps	yes, with acknowledgement	yes
Multi-server shutdown with different OS	50 (Shutdown Modules)	unlimited - tested with more than 250 clients
Alarms by e-mail / pager / SMS	yes	-
Detailed UPS status including three phase measurements	yes	no
Export des logs	yes	yes (local)
Integral real time clock (date stamping)	yes (via the network)	yes (proxy system clock)
Remote control of UPS / Powershare™	yes	-
Settings / Maintenance	local (RS232) or remote (HTTP)	local or remote (HTTP/HTTPS)
Simulation of shutdown	yes	yes
Environment measurements (temperature, humidity, switches)	yes with optional environment sensor	-

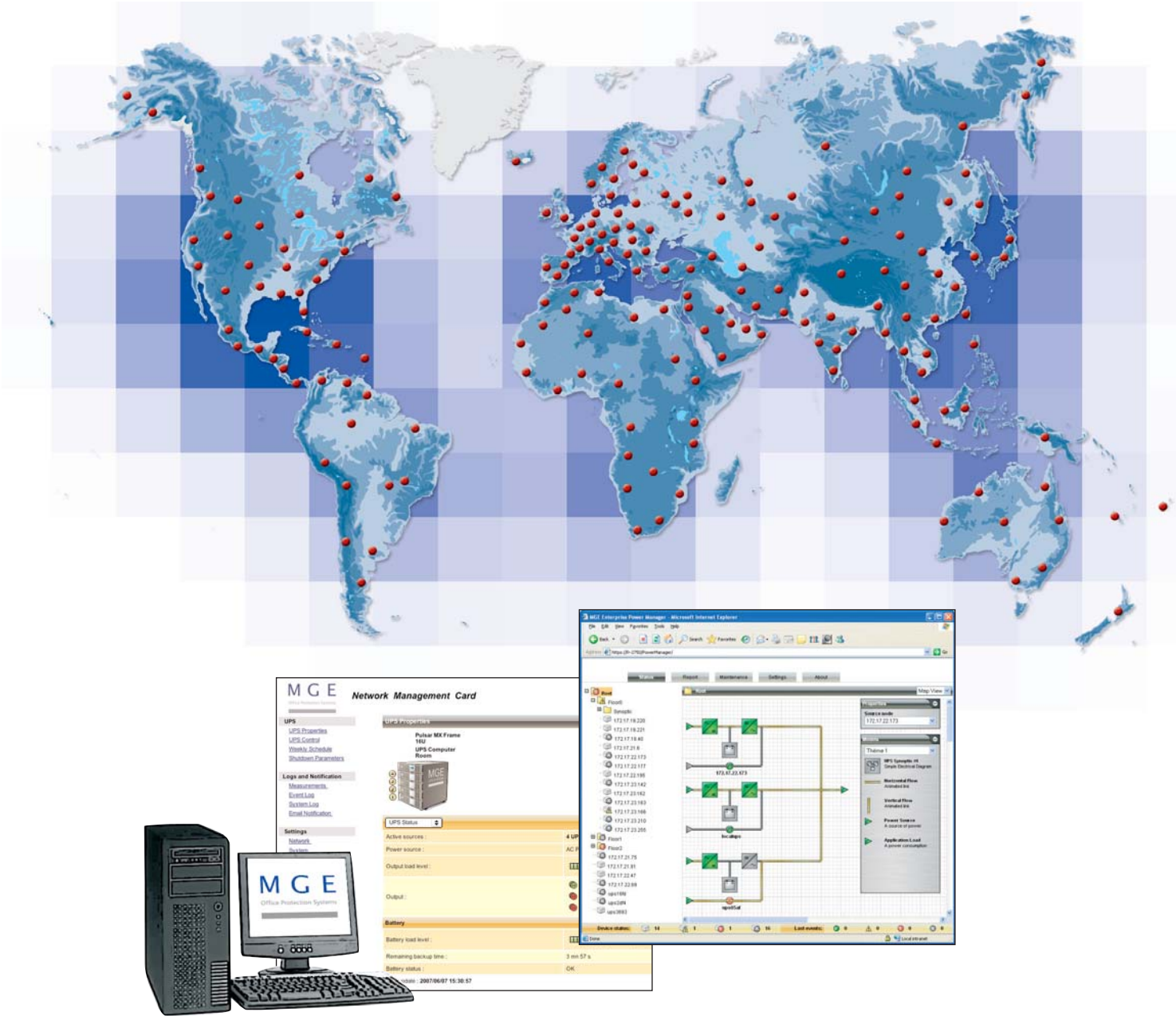
Protection	"Network Shutdown Module"
Installation	
Operating systems for servers protected	Windows Vista,2003 Server (x32 and x64), XP, 2000, Linux (Ubuntu, Debian, Redhat, Suse Novell), Mac OS X, Netware, IBM AIX, HP-UX, SUN Solaris, any OS with Java 2
Easy to deploy: quiet installation, centralised configuration, personalised package	yes (Mac OS/X only supports the centralised configuration)
Configuration interface	Remote browser (for Windows and Linus) local interface (other operating systems)
Basic functions	
Automatic shutdown	yes (shutdown + hibernation for Windows)
Automatic system re-start	yes
Alarm messages	yes
Log file	yes
Alarm messages by e-mail/pager/SMS	e-mail/pager/SMS for Windows and e-mail only for the others
Advanced functions	
Automatic programme execution or operations on events (power cut, end of back-up time, etc.)	yes
Management of redundant power supplies and multiple UPSs	yes (for Windows and Linux)

Remote management and monitoring	
Web interface functions	***Using a browser***
Status of UPS (including three phase measurements)	yes
Log export	yes
Unit ON/OFF and Powershare™ socket control	yes (with SNMP/Web Card connection)
Alarm notification by Internet	yes
Snap-in applications	***Using Management-Pac 2***
Conformity to SNMP (RFC 1628)	yes
Compatible with network management consoles	HP Open-View NNM 6.4/7/7.5 for Windows XP and NNM 6 for HP-UX, IBM Tivoli Netview 7.1 for AIX 5.1, Computer Associates Unicenter 3.0 & 3.1 for Windows, HP Systems Insight manager
Multi-UPS supervision	***Using Enterprise Power Manager v.2***
Server operating system	Windows Vista, 2003 Server, XP, 2000
Browser and plug-ins supported	Internet Explorer 6 and 7, Firefox1.5 and 2
Security	2 password levels and 128 bit SSL for browser/server transactions
MGE compatible equipment with Internet access	Network Management Card (SNMP/Web)/Transverse (66 074) or Minislot (66 244) or Minislot 2006 Edition (66 120). Network Management Proxy / XML-@gent (Windows), MGE Switched PDU NM and Ampmeters PDU NM, MGE Midspan 24 NM
MGE compatible equipment without Internet access	SP WAN - UM Agent - Network Management Proxy SNMP card - 66 245 and 66 062, UM-Link
Other hardware supported	UPS complying with MIB UPS standard (up-to-date list of UPS available on the Web site)
Alarms/notifications	e-mail, SMS, pager, broadcast, audible alarm
Multiple overviews of the system	yes (according to status, type, load, battery charge, physical layout, etc)
Supervision of high availability UPS architectures	yes (parallel UPSs, redundant UPS with STS, sequential redundancy, etc.)
Event log	yes, exports in Excel, Word, RTF formats

Ordering information

Connection to IP networks	
SNMP/Web Card (SNMP/Web)	**66 102** NMC"Minislot" 2006 for Evolution and Evolution S, Pulsar, Pulsar M/MX MX Frame **66 074** "Transverse" for Comet EX RT and MultiSlot
STS-Web card	**66 073** "Transverse" for Upsilon STS source transfer switch
SNMP Proxy	on the Solution-Pac 2 CD-ROM delivered with most UPS or free from MGE UPS SYSTEMS Web site
Protection	
Network Shutdown Module	on the Solution-Pac 2 CD-ROM delivered with most UPS or free from MGE UPS SYSTEMS Web site
Remote management and monitoring	
Snap-in application for HP/Compac Insight Manager	available free of charge from MGE UPS SYSTEMS Web site
Management-Pac 2	**66 923**
Enterprise Power Manager version 5 UPS Version 50 UPS Version unlimited number of UPS	 free with Solution-Pac 2 delivered with most UPS or free from the Web site CD Management-Pac 2 **(66 923)** rev. BB, available May 2006) CD Enterprise Power Manager Gold **(66 924)** (rev. AB, available May 2006)
Other options	
Multislot	**66 057** (IEC) / **66 055** (DIN/USE)
Environment sensor for SNMP/Web card	**66 846**

MGE Office Protection Systems are always there to help you, wherever you may be.



Windows Vista
Designed for Microsoft® Windows® XP
Designed for Microsoft® Windows® Server 2003, Windows® 2000 Server
Mac
Built for Mac OS X
WE'RE OPEN source
ca smart
CE
TÜV Rheinland GS
AFAQ ISO 14001
AFAQ ISO 9001 VERSION 2000
CENELEC
IEC

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